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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/852,456	05/09/2001	Josef Kickartz	P6281.7US	5114
30008	7590	12/27/2005	EXAMINER	
GUDRUN E. HUCKETT DRAUDT			PHAM, HAI CHI	
LONSSTR. 53			ART UNIT	PAPER NUMBER
WUPPERTAL, 42289				2861
GERMANY				

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/852,456	KICKARTZ ET AL. <i>(initials)</i>
	Examiner Hai C. Pham	Art Unit 2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 04 October 2005.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,4,6,8-31 and 35-44 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,4,6,8-31 and 35-44 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinada (U.S. 5,475,523) in view of Matsumoto (U.S. 5,929,975).

Shinada discloses a laser computer output microfilmer using a laser light source for scanning image data based on the information provided by an external computer onto the surface of a recording material such as microfilm, wherein the rotational motion of the polygon mirror (46) for scanning the laser beam is controlled by the driving control circuit (147) with respect to the motion of the microfilm supported on an external drum (54) (Fig. 13).

Shinada fails to teach the microfilm being separated and having different exposing data.

Matsumoto discloses an apparatus for exposing a photosensitive material comprising an optical unit for scanning the light beam across the width of a portion of the photosensitive material to form images of different formats or sizes and of different contents in one exposure time.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to adapt the device of Shinada to record images of different contents in one exposure time as taught by Matsumoto. The motivation for doing so would have been to render the exposure system highly efficient and compact as suggested by Matsumoto at col. 2, lines 24-29.

3. Claims 1, 6, 8-25, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinada in view of Matsumoto and Herbert (U.S. 6,332,734).

Shinada discloses a laser computer output microfilmer using a laser light source for scanning image data based on the information provided by an external computer onto the surface of a recording material such as microfilm, wherein the rotational motion of the polygon mirror (46) for scanning the laser beam is controlled by the driving control circuit (147) with respect to the motion of the microfilm supported on an external drum (54) (Fig. 13).

Shinada fails to teach the differently sized formats being produced in any arrangement on the microfilm.

Matsumoto discloses an apparatus for exposing a photosensitive material comprising an optical unit for scanning the light beam across the width of a portion of the photosensitive material to form images of different formats or sizes and of different contents in one exposure time.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to adapt the device of Shinada to record images of different formats in one exposure time as taught by Matsumoto. The motivation for doing so would have

been to render the exposure system highly efficient and compact as suggested by Matsumoto at col. 2, lines 24-29.

Shinada further discloses the portion of the microfilm to be exposed by said light beam is curved as being supported on the curved surface of the external drum (54), but fails to teach the surface being curved about the rotational axis about which the rotational movement is carried, and all the components pertinent to the use of an internal drum.

Regardless, such surface being curved about the rotational axis about which the rotational movement is carried would be provided if the drum carrying the microfilm is of an internal type drum as evidenced by Hebert, which teaches an image forming apparatus using an internal drum for supporting the recording medium such that the rotational movement of the laser beam (28) scans the recording material whose surface is curved about the rotational axis about which the rotational movement is carried (Fig. 1). Hebert further teaches:

- at least one optical device (optical system 34 and deflector element 40) positioned between said light source (32) and the recording material (18) such that said light beam (28) is guided through said at least one optical device (34, 40) to the recording material,
- said at least one optical device has an optical unit (deflector element 40) rotatable about said rotational axis (parallel the shaft supporting the carriage 26),
- a shaft (shaft carrying the optical carriage 26) (Fig. 2) on which said optical unit (40) is seated,

- said optical unit (40) is configured to be moveable relative to the microfilm (the deflector element 40 being moved by the spin motor 42 relative to the recording material 18),
- a microfilm drum (internal drum 20),
- said microfilm drum (20) has a curved support (Fig. 1) configured to support the portion of the microfilm (recording material 18) to be exposed,
- said microfilm drum (20) has a passage way (as provided by the internal curved surface of the drum 20) and wherein said optical unit (deflector element 40) is positioned at least partially in said passageway during said exposure time,
- said support (internal surface of the drum 20) is curved about said rotational axis (parallel to the shaft),
- the microfilm (recording material 18) has a longitudinal extension in a direction transverse to said rotational axis (as the recording material is reeling off the supply roll 60) (Fig. 1),
- said optical unit (deflector element or spinner 40) has at least one reflective surface configured to reflect said light beam (28) toward the microfilm (18) (Fig. 2),
- said optical unit is a spinning unit (spinner 40),
- at least one carriage (optical carriage 26), wherein said optical unit (40) is arranged on said at least one carriage (26),
- said at least one carriage (26) is moveable in a direction of said rotational axis (direction of the arrow A) (Fig. 2),

- said light source (32) is arranged on said at least one carriage (26) (Fig. 2),
- a light guide configured to guide said light beam (28) emitted by said light source (32) to said optical device (optical system 34 including a focusing lens being configured to guide the light beam 28 to the deflector element 40) (Fig. 2),
- said microfilm drum (20) is configured to be moveable relative to said optical device (40) (a relative movement exists between the deflector element 40 and the internal drum 20),
- said optical unit (deflector element 40) is configured to be rotatably driven (by the spin motor 42) at a constant rotational speed at least within the range in which said light beam (28) reflected on said reflective surface (of the deflector element 40) impinges on the microfilm (18) (Fig. 1).

Since Shinada also suggests that the recording material supporting member can be either an external or internal drum, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to configure the scanning structure of the laser scanner of Shinada as taught by Hebert since Hebert teaches what is known in the art to provide the minimum required components pertinent to the use of an internal drum for supporting the recording material.

Shinada further teaches at least one modulator (AOM) being arranged downstream of said light source (laser 31) in a path of said light beam (col. 17, lines 5-15), and wherein said modulator (AOM) modulates the light beam based on said data stream.

Shinada also teaches at least one synchronizing unit (position sensor 72) configured to synchronize the supply of said data stream with at least one of the rotational

speed and the rotational travel of said optical unit (Fig. 13), and the synchronizing unit having at least one sensor (sensor 72) positioned in the path of said light beam shortly before a leading end of the portion of the microfilm to be exposed (Fig. 13).

With regard to claim 24, although Shinada does not mention the use of the digital-to-analog converter to be connected to the modulator, it is however well known in the art that the acousto-optic modulator (AOM) needs an analog radio frequency signal to be applied to the AOM for generating supersonic in the AOM, and that the digital image data signals from the computer have to be converted by a digital-to-analog converter into the above mentioned analog radio frequency signals to actuate the AOM. In other words, the digital-to-analog converter is required to be connected to the AOM and thus the digital-to-analog converter is inherent to device of Shinada.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinada in view of Matsumoto and Hebert, as applied to claim 3 above, and further in view of Hazman (U.S. 5,625,403).

Shinada, as modified by Matsumoto and Hebert, discloses all the basic limitations of the claimed invention except for telescope unit.

Hazman discloses an image recording apparatus for used with either an internal or external drum, wherein the optical system includes a telecentric demagnifying telescope (25) for recording image on the film for reducing the image.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the telescope in the device of Shinada as taught by

Hazman for the purpose of reducing the recorded image as suggested by Hazman at col. 5, lines 12-21.

5. Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinada in view of Matsumoto and Hebert, as applied to claim 9 above, and further in view of Newland (U.S. 6,600,549).

Shinada, as modified by Matsumoto and Hebert, discloses all the basic limitations of the claimed invention except for the support being provided with a guide, a mechanism for pulling and releasing the recording material, and a vacuum for holding the recording material.

Newland discloses an image scanning apparatus using an internal drum for carrying the film (12) through the recording station, wherein feed rollers (14, 15) are provided to guide the film onto the curved surface of the drum, output rollers (67, 68) for transporting the film out of the recording area, and a vacuum for holding the film onto the curved surface of the drum during the exposure.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the rollers and the vacuum to the device of Shinada as taught by Newland. The motivation for doing so would have been to coordinate the transport of the film through the printing area as well as to stably hold the film during its exposure to obtain a recording image of high quality.

6. Claims 35-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinada in view of Matsumoto, Herbert and Newland.

Shinada discloses all the basic limitations of the claimed invention including the data information being provided by a computer to form the basis for modulating the light beam via a modulator, e.g., AOM or EOM, but fails to explicitly disclose the digitalization of the documents to form a data stream, and the storing of the data stream.

Newland teaches image formation being obtained through scanning the original documents (1) to generate a grayscale image file (3), which are converted into bit map forms before being printed (Fig. 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the image scanner and the data storage as taught by Newland in the device of Shinada. The motivation for doing so would have been to allow the computer output microfilm to accept a variety of input image information.

With regard to claim 43, Shinada teaches the laser beam scanning the microfilm supported on the surface of the drum (54) in a line-by-line manner using a rotating polygon mirror (46) such that the scanned laser beam is not activated at the end of each scanning line.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 4, 6, 8-31 and 35-44 have been considered but are moot in view of the new grounds of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C. Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on (571) 272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM
PRIMARY EXAMINER
December 23, 2005